KIX0149-US

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:	
NORIHIRO IMAMURA ET AL.	
Serial No.: 09/870,522	**Art Unit: 2873**
Filed: June 1, 2001	**Examiner: THOMAS, Brandi N.**
For: METHOD FOR MAKING LENS ARRAY HAVING LIGHT-SHIELDING LAYER	

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 35 U.S.C. §134 and C.F.R. §41.31, Appellants submit this Appeal Brief to appeal the Examiner's rejection of claims 1-10 in the final Office Action mailed April 7, 2006.

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I. REAL PARTY IN INTEREST

The named inventors have assigned all ownership rights in the pending application to Rhom Co., Ltd., 21 Saiin Mizosaki-Cho, Ukyo-Ku, Kyoto-Shi, Kyoto 615-8585, Japan, which is the real party in interest.

II. RELATED APPEALS AND INTERFERENCES

The appellants, their legal representatives, and the assignee are not aware of any other pending appeals, interferences or judicial proceedings which may be related to, will directly affect or be directly affected by, or have a bearing on the Board's decision in this appeal.

III. STATUS OF THE CLAIMS

Claims 1-11 remain pending. Claim 11 is allowed as indicated on the Office Action Summary and in paragraphs 4 and 5 of the Office Action. It is believed that the indication in paragraph 2 of the Office Action that claim 11 is rejected is erroneous. The rejection of claims 1-10 is being appealed.

IV. STATUS OF AMENDMENTS

The last amendment to the claims was made in connection with the Amendment filed January 23, 2006. The status of the claims in this application is as set forth above and in Appendix A.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The presently claimed invention, as recited in independent claim 1, relates to a method of forming or manufacturing an image-forming lens array for use in an image reading apparatus or the like. The invention particularly relates to a light-shielding treatment for such a lens array. (Specification, p.1.) Figures 1 and 2 show a lens array A1 that includes a holder 10, lenses 11, recesses 14 that separate the lenses 11, and a light shielding layer 3 that is disposed in the recesses 14 and around a periphery of each lens 11.

In accordance with the present invention, to form the light shielding layer 3, and as shown in Figures 7-9, black solid ink is applied to the holder 10 to form a circular coating layer 3a' that surrounds each lens 11. Circular coating layer 3a' is spaced from the outer circumference of a corresponding lens surface 11a by an appropriate distance La. (Specification, p. 10.) After coating the ink, the ink is heated such that it spreads to slightly overlap the circumferential portion of the lens surface 11a uniformly therearound by an appropriate amount Lb. (Id.) Figures 10 and 11 depict the ink after spreading.

One benefit of this method is that even if the initial coating of solid ink is not accurately placed, once the solid ink is melted, the resulting fluid ink flows accurately around the lens and then solidifies as it cools. (Specification at [0061].)

Independent claim 1 of the present application recites limitations consistent with the foregoing. The claim recites a method of making a lens array comprising forming a resin-molded piece which includes a plurality of lenses each having a convex lens surface, and a holder portion for holding the plurality of lenses (i.e., holder 10 with lenses 11); applying a coating to the holder portion so as to surround said each lens surface at a predetermined spacing

from an outer periphery of the lens surface (this is shown in Figures 8 and 9); melting the applied coating for causing the melted coating to spread onto the outer periphery of the lens surface (this is shown in Figures 10 and 11); and solidifying the melted coating.

Independent claim 8, recites similar subject matter. This claim does not expressly recite a holder with a plurality of lenses, but instead recites a transparent member having a flat surface at least partially and a projection rising from the flat surface. Importantly, however, the method of claim 8 requires applying a black material to the flat surface so as to surround the projection at a predetermined spacing from an outer periphery of the projection (shown in Figures 8 and 9); melting the black material so that the melted black material spreads onto the outer periphery of the projection (shown in Figures 10 and 11); and solidifying the melted black material.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The following grounds of rejection are to be reviewed on appeal:

(1) Claims 1-7 under 35 U.S.C. §103(a) over the combination of Taniguchi et al. (US 5,023,422) and Brown (US 4,247,493); and

(2) Claims 8-10 under 35 U.S.C. §103(a) over Brown (US 4,247,493).

VII. ARGUMENT

A. The 35 U.S.C. §103(a) rejection of claims 1-7 based on a combination of Taniguchi and Brown is improper and should be withdrawn

To establish a prima facie case of obviousness, there must be (1) some suggestion or motivation (either in the references themselves or in the knowledge generally available to one of ordinary skill in the art) to modify the reference or to combine reference teachings to achieve the claimed invention, and (2) the prior art must teach or suggest all the claim limitations. MPEP §2143.

Applicants submit that the asserted prior art, taken singly, or in combination, does not disclose a fundamental feature of the claimed invention. As admitted in the Office Action, Taniguchi et al. does not disclose applying a coating to a holder portion (see lines 6-7 in Section 2 on page 2 of the Office Action). Clearly, then, this reference in itself is not an obstacle to the allowance of the pending claims.

For this missing key feature, the Office Action cites to Brown. However, Brown does not disclose applying a coating to surround a lens surface at a predetermined spacing from an outer periphery of the lens surface. Indeed, this point is also admitted in the Office Action (see lines 13-14 in Section 2 on page 2 of the Action). Nevertheless, the claims have been deemed obvious over the combination of these two prior art references.

Rather than rendering claim 1 obvious, Applicants submit that Brown actually teaches away from the present invention. As seen from lines 63-65 in col. 2 of Brown, for example, the surface of the lens blank is first lightly covered with a protective material to provide a uniform layer on one surface of the lens. It is believed that, for the purposes of ensuring proper protection of the lens surface, the entire lens surface should be covered. In other words, the application of the conventional protective material is not performed in the same manner as set forth in claim 1 (or claim 8) (i.e., spaced from a periphery of the lens or projection). Further, as seen from lines 3-10 in col. 3 of Brown, "a mold is placed adjacent to the coated surface of the lens and a layer of low melting point alloy is poured into the mold and against the protective layer on the lens surface to form a lead block. This low melting point alloy material solidifies in the mold and also becomes attached to the surface of the lens through the protective layer." It should be appreciated here that if the protective layer were formed at a predetermined spacing from the outer periphery of the lens surface (in that case, the lens surface is exposed at least partially), the lens surface would be damaged by the poured alloy material. Obviously, this should not be the case for the prior art technique.

In other words, Brown teaches a protective layer on the entirety of the lens and then further teaches pouring low melting point alloy over that protective layer. As such, this reference not only does not expressly teach the application of ink as required by claim 1, but actually teaches one of ordinary skill in the art to perform a step that is completely inconsistent with the requirements of claim 1 (again, applying ink in such a way so as to "surround each lens surface at a predetermined spacing from an outer periphery of the lens surface").

For at least the foregoing reasons, the §103(a) rejection of claims 1-7 based on a combination of Taniguchi et al. and Brown should be reversed.

B. The 35 U.S.C. §103(a) rejection of claims 8-10 over Brown is improper and should be withdrawn

Independent claim 8 recites subject matter similar to independent claim 1. In particular, claim 8 includes the limitations of:

> applying a black material to the flat surface so as to surround the projection at a predetermined spacing from an outer periphery of the projection; and
>
> melting the black material so that the melted black material spreads onto the outer periphery of the projection.

As explained above with respect to the rejection of independent claim 1, Brown not only does not teach application of a protective layer around a periphery of a projection (e.g., a lens), but the reference actually teaches to cover the entirety of the lens. This is opposite to the method recited in the claim. As such, Brown actually teaches away from the express requirements of independent claim 8 and, therefore, this claim cannot be rendered obvious by Brown.

For at least the foregoing reasons, the §103(a) rejection of claims 8-10 based on Brown should be reversed.

C. Conclusion

For all of the above reasons, it is respectfully asserted that the pending claims of the present application would not have been obvious to those of ordinary skill in the art.

Accordingly, the Board should overturn the present rejections. Reversal of the pending rejections of record and allowance of the claims of this application are respectfully requested.

VIII. CLAIMS APPENDIX

(See Appendix A)

IX. EVIDENCE APPENDIX

(None.)

X. RELATED PROCEEDINGS APPENDIX

(None.)

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Respectfully submitted,

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APPENDIX A

Claims Appendix:

1. (Previously Presented) A method of making a lens array comprising the steps of:

forming a resin-molded piece which includes a plurality of lenses each having a convex lens surface, and a holder portion for holding the plurality of lenses;

applying a coating to the holder portion so as to surround said each lens surface at a predetermined spacing from an outer periphery of the lens surface;

melting the applied coating for causing the melted coating to spread onto the outer periphery of the lens surface; and

solidifying the melted coating.

2. (Original) The method according to claim 1, wherein the plurality of lenses are integral with the holder portion.

3. (Original) The method according to claim 1, wherein the coating comprises solid ink.

4. (Original) The method according to claim 1, wherein the coating is applied by an ink jet printer.

5. (Original) The method according to claim 1, further comprising the step of forming a plurality of recesses in the holder portion for partitioning the plurality of lenses.

6. (Original) The method according to claim 5, further comprising the step of forming a light-shielding layer on wall surfaces defining the plurality of recesses.

7. (Original) The method according to claim 1, further comprising the step of dividing the resin-molded piece into a plurality of individual lens arrays.

8. (Previously Presented) A method of performing light shielding treatment for a transparent member having a flat surface at least partially and a projection rising in the flat surface, the method comprising the steps of:

applying a black material to the flat surface so as to surround the projection at a predetermined spacing from an outer periphery of the projection;

melting the black material so that the melted black material spreads onto the outer periphery of the projection; and

solidifying the melted black material.

9. (Original) The method according to claim 8, wherein the applied black material constitutes a closed loop which surrounds the projection.

10. (Original) The method according to claim 8, wherein the applied black material constitutes a plurality of arc segments spaced from each other.

11. (Previously Presented) A lens array comprising:

a plurality of lenses each of which has a convex lens surface;

a holder portion for holding the lenses; and

a light-shielding member provided at the holder portion;

wherein the light-shielding member overlaps a circumferentially peripheral portion of each lens surface;

wherein the light-shielding member includes a first light-shielding layer and a second light-shielding layer which are made of different materials, the first light-shielding layer overlapping the circumferentially peripheral portion of each lens surface, the second light-shielding layer being formed at the holder portion so as to surround the first light-shielding layer.

12. (Canceled)